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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/774,383	01/30/2001	Hao Bi	CE08509R	2575

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EXAMINER	
LELE, TANMAY S	

ART UNIT	PAPER NUMBER
2684	

DATE MAILED: 06/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/774,383	BI ET AL.	
	Examiner	Art Unit	
	Tanmay S Lele	2684	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 January 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,5,7 and 10-12* is/are rejected.

7)☒ Claim(s) *2-4,6,8 and 9* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2,3*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Allowable Subject Matter

1. Claims 2 – 4, 6, 8, and 9 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 2, the present invention is of the method of claim 1 wherein the stepsize is calculated using the equation upDelta=baseUpDelta.multidot.(Eb/Nt)/avgEbNt and wherein baseUpDelta is a predetermined scaling factor. Closest prior art Schiff (Schiff, US Patent No. 6,449,463) in view of Lee et al. (Lee, US Patent No. 6,690,944), teach of the stepsize but alone or in combination with other prior art do not specifically teach of wherein the stepsize is calculated using the equation upDelta=baseUpDelta ·(Eb/Nt)/avgEbNt and wherein baseUpDelta is a predetermined scaling factor.

Claim 3 is allowable as being dependent on claim 2.

Regarding claim 4, the present invention is of the method of claim 1 wherein the channel quality metric Eb/Nt is calculated using the equation $Eb/Nt=(\Sigma_{i=1}{}^{N}sgn(Out(i)) \cdot In(i))^2/(\Sigma_{i=1}{}^{N}In(i)^2-(\Sigma_{i=1}{}^{N}sgn(Out(i)) \cdot In(i))^2)$. The closest prior art Schiff (Schiff, US Patent No. 6,449,463) in view of Lee et al. (Lee, US Patent No. 6,690,944), teach of Eb/Nt but alone or in combination with other prior art not specifically of wherein the channel quality metric Eb/Nt is calculated using the equation $Eb/Nt=(\Sigma_{i=1}{}^{N}sgn(Out(i)) \cdot In(i))^2/(\Sigma_{i=1}{}^{N}In(i)^2-(\Sigma_{i=1}{}^{N}sgn(Out(i)) \cdot In(i))^2)$.

Regarding claim 6, the present invention is of the method of claim 5 further comprising using the frame quality indicator to calculate a measured frame error rate (mFER) and wherein the amount of frames is adaptively determined using the equation

adaptively determined amount of frames=mFER/tFER^2. The closest prior art Schiff (Schiff, US Patent No. 6,449,463) in view of Lee et al. (Lee, US Patent No. 6,690,944), teach of tFER but alone or in combination with other prior art not specifically of further comprising using the frame quality indicator to calculate a measured frame error rate (mFER) and wherein the amount of frames is adaptively determined using the equation adaptively determined amount of frames=mFER/tFER^2.

Regarding claim 8, the present invention is of the method of claim 7 wherein the stepsize is calculated using the equation dnDelta=baseDnDelta·avgEbNt/minEbNt and wherein baseDnDelta is a predetermined scaling factor. The closest prior art Schiff (Schiff, US Patent No. 6,449,463) in view of Lee et al. (Lee, US Patent No. 6,690,944), teach of the stepsize but alone or in combination with other prior art do not specifically teach of wherein the stepsize is calculated using the equation dnDelta = baseDnDelta · avgEbNt/minEbNt and wherein baseDnDelta is a predetermined scaling factor.

Claim 9 is allowable as being dependent on claim 8.

2. Claims 11 and 12 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Regarding claim 11, the present invention is of the method of claim 10 wherein the OLT is adjusted using the equation OLT(i)=OLT(i-1) floatDelta, when fadeDepth(i)>fadeDepth(i-1). The closest prior art Schiff (Schiff, US Patent No. 6,449,463) in view of Lee et al. (Lee, US Patent No. 6,690,944), teach of the fade depth but alone or in combination with other prior art do not specifically teach of wherein

the OLT is adjusted using the equation OLT(i)=OLT(i-1) floatDelta, when fadeDepth(i)>fadeDepth(i-1).

Regarding claim 12 the present invention is of the method of claim 10 wherein the OLT is adjusted using the equation OLT(i)=OLT(i-1)/floatDelta, when FadeDepth(i)<fadeDepth(i-1). The closest prior art Schiff (Schiff, US Patent No. 6,449,463) in view of Lee et al. (Lee, US Patent No. 6,690,944), teach of the fade depth but alone or in combination with other prior art do not specifically teach of wherein the OLT is adjusted using the equation OLT(i)=OLT(i-1)/floatDelta, when fadeDepth(i)<fadeDepth(i-1).

Specification

3. The disclosure is objected to because of the following informalities: page 3 line 13, "mtrics" (assumed to be "metrics"). Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 11 and 12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claims 11 and 12, it was not understood what was meant by, "floatDelta." For purposes of examination, it was assumed this was in reference to a constant as explained in paragraph 0025 of the specification. Appropriate correction is requested.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 1, 5, 7, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schiff (Schiff, US Patent No. 6,449,463) in view of Lee et al. (Lee, US Patent No. 6,690,944).

Regarding claim 1 Schiff teaches of in a communication system receiver, a method of adjusting an outer loop threshold (OLT) for power control (Figure 5) comprising: obtaining a frame quality indicator (column 6, lines 38 – 48); and obtaining a channel quality metric Eb/Nt (column 6, lines 38 – 48 and column 5, lines 62 – 67); if the frame quality indicator is equal to a logic zero, obtaining an average Eb/Nt (avgEbNt); and using Eb/Nt and avgEbNt to increase the OLT (column 6, lines 38 – 48; column 5,lines 62 – 67, and column 7, lines 16 – 20).

Schiff does not specifically teach of [using Eb/Nt and avgEbNt] to calculate a stepsize [used to increase the OLT] (note that the brackets are used for clarity in language and that the it is believed these limitations are addressed in the above cited reference; further note that Schiff does teach of adjustments to the threshold such as in column 6, lines 36 –38).

In a related art dealing with power control, Lee teaches of [using Eb/Nt and avgEbNt] to calculate a stepsize [used to increase the OLT] (starting column 8, line 66 and ending column 9, line 4 and further in column 10, lines 37 –49) and further of

obtaining an average Eb/Nt (avgEbNt) (column 10, lines 37 –49).

It would have been obvious to one skilled in the art at the time of invention to have included into Schiff's power control system, Lee's step size adjustments, for the purposes of including means to adjust the level of power control on the additional basis of quality of service requirements, as taught by Lee.

Regarding claim 5, Schiff teaches of in a communication system receiver having a frame error rate (FER), a method of adusting an outer loop threshold (OLT) for power control (Figure 5) comprising: obtaining a frame quality indicator (column 6, lines 38 – 48); and if the frame quality indicator is equal to a logic one for an adaptively determined amount of consecutive frames, decreasing the OLT (column 6, lines 38 – 48 and column 7, lines 7 –15).

Schiff does not specifically teach of target [frame error rate (tFER)] (note that the brackets are used for clarity in language and that the it is believed these limitations are addressed in the above cited reference; further note that Schiff does teach of FER such as in column 6, lines 41 – 43).

In a related art dealing with power control, Lee teaches of target [frame error rate (tFER)] (column 9, lines 6 –26).

It would have been obvious to one skilled in the art at the time of invention to have included into Schiff's power control system, Lee's step size adjustments, for the purposes of including means to adjust the level of power control on the additional basis of quality of service requirements, as taught by Lee.

Regarding claim 7, Schiff in view of Lee teach all the claimed limitations as recited in claim 5. Schiff and Lee further teach of comprising the steps of: obtaining

channel quality metrics Eb/Nt (Schiff: column 5, lines 62 –67 and column 6,lines 45 – 48); obtaining an average Eb/Nt (avgEbNt) (Schiff: column 5, lines 62 –67 and column 6,lines 45 –48); obtaining a minimum Eb/Nt (minEbNt) (Schiff: column 5, lines 62 –67 and column 6,lines 45 –48 and column 6,lines 7 –14); and using avgEbNt and minEbNt to calculate a stepsize used to decrease the OLT (Schiff: column 7,lines 7 – 15 and Lee: starting column 8, line 66 and ending column 9, line 4 and further in column 10, lines 37 –49).

Regarding claim 10, Schiff teaches of in a communication system receiver having a frame error rate (FER), a method of adjusting an outer loop threshold (OLT) for power control (Figure 5) comprising: obtaining a frame quality indicator (column 6, lines 38 – 48); if the frame quality indicator is not equal to a logic zero and the frame quality indicator is not equal to a logic one for an adaptively determined amount of consecutive frames, adjusting the OLT according to a comparison of a fadeDepth(i) and a fadeDepth(i-1) (column 8, lines 6 – 16 and column 8, lines 22 – 29).

Schiff does not specifically teach of target [frame error rate (tFER)] (note that the brackets are used for clarity in language and that the it is believed these limitations are addressed in the above cited reference; further note that Schiff does teach of FER such as in column 6, lines 41 – 43).

In a related art dealing with power control, Lee teaches of target [frame error rate (tFER)] (column 9, lines 6 –26).

It would have been obvious to one skilled in the art at the time of invention to have included into Schiff's power control system, Lee's step size adjustments, for the

purposes of including means to adjust the level of power control on the additional basis of quality of service requirements, as taught by Lee.

Citation of Pertinent Prior Art

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

Inventor	Publication	Number	Disclosure
Kim et al.	US Patent	6,151,508	Reverse power control method in a cellular system
Kamel et al.	US Patent	6,285,886	Method for controlling power for a communications system having multiple traffic channels per subscriber
Kim et al.	US Patent	6,456,850	Method for preventing overload conditions in communication systems
Hwang et al.	US Patent	6,501,958	Method for controlling forward power control utilizing an erasure indicator bit in a CDMA system
Han et al	US Patent	6,507,744	Outer loop power control method during a soft handoff operation
Wang et al.	US Patent	6,590,874	Method and system for implementing outer loop power control in discontinuous transmission mode using explicit signaling
Ahmed et al.	WIPO	99/18,702	Controlling transmitted traffic channel power

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tanmay S Lele whose telephone number is (703) 305-3462. The examiner can normally be reached on 9 - 6:30 PM Monday – Thursdays and on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay A. Maung can be reached on (703) 308-7745. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-0377.

Tanmay S Lele
Examiner
Art Unit 2684

NAY MAUNG
SUPERVISORY PATENT EXAMINER

tsl
June 21, 2004